

# Evaluation of the DDL training workshop for in-service Chinese language teachers

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**Abstract.** In this study, we held a 12-hour workshop focused on training the Data-Driven Learning (DDL) approach for in-service Chinese teachers aiming to implement this pedagogy in Mandarin Chinese classrooms in the future. We analyzed data from a postworkshop questionnaire to understand how the individual-level traits of Chinese teachers (such as their experience, ability, and motivations) relate to their integration of corpus-based methods. The questionnaire results indicate that teacher confidence in using the corpus is critical for the future application of DDL in teaching Chinese as a second language. Teachers who use corpus-based pedagogies are more positive at designing and guiding DDL activities and are more willing to practice DDL in language classes.

**Keywords:** data-driven learning, Chinese language, teacher training, questionnaire, corpus.

## 1. Introduction

The DDL approach has been widely embraced in second language curricula in Western countries for many years (Boulton & Tyne, 2013). However, corpus-based pedagogies, such as DDL, are recently gaining traction in Chinese as a Second Language (CSL) classrooms (Smith, 2018; Wang, Hsu, Long, & Liles, 2020). To facilitate the implementation of this method, studies have specified that language teachers should be acquainted with the basic concepts of corpora, skills of using corpora tools, knowing how to interpret corpora data, and knowing how to generate corpus output into their teaching specialty, etc. (Callies, 2019; Mukherjee, 2006). However, for CSL teaching, it is more challenging to familiarize teachers with

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corpus consulting techniques, because the lack of clear boundaries between Chinese characters and words can make applying the DDL more difficult (Smith, 2018). Research has also indicated that the individual-level characteristics of teachers (for example, experience, motivation, attitudes toward corpus-based pedagogy) were related to their probabilities of using the corpus approach in the classroom (Chen, Flowerdew, & Anthony, 2019). To enhance future DDL teacher training outcomes, we will describe the design of our current training content and discuss our postworkshop questionnaire analysis.

## **2. The DDL teacher training workshop**

The workshop, led by a university professor who specialized in corpus linguistics, was divided into four weeks with three hours of lectures per week using Google Meet. To increase the possibility and relevant skills of CSL teachers to adopt the DDL approach, the workshop mainly focused on teaching (1) basic concepts of Chinese corpora (e.g. word segmentation and part of speech); (2) skills in consulting Chinese corpora, particularly the largest Mandarin corpus in Taiwan, Chinese of Contemporary Taiwanese Mandarin; (3) the corpus query tools, Sketch Engine and AntConc; and (4) skills to analyze corpus data and generate pedagogical materials. Seventy-nine teachers (70% with a master's degree) participated in the workshop, with an average teaching experience of 9.8 years. Fifty participants finished the training and completed the final assessment of the workshop, which required them to design teaching materials and plans for a 50-minute DDL activity.

## **3. Gathering and analyzing data from postworkshop questionnaire**

After the last lecture, 50 of the 79 participants completed a postworkshop questionnaire. The questionnaire was inspired by Leńko-Szymańska (2015); it comprised four open-ended questions to investigate the views of the participants in the workshop and 39 Likert-scale questions, of which 36 questions covered seven variables that reflect participants' traits, with three to 14 questions for each variable. These variables were self-evaluations of their (1) motivations for participating in the workshop, (2) prior knowledge of corpora, (3) skills toward using corpora after the workshop, (4) perceptions of adopting corpora in teaching, (5) skills to implement and design DDL activities, (6) willingness to adopt corpus-based methods in future teaching, and (7) evaluation of the workshop. These variables and the participants' teaching experience and educational background form nine variables that reflect

the traits of the CSL teachers. To reveal the relationship between the personal characteristics of the CSL teachers and the possibility of adopting corpora in teaching to improve the DDL teachers' future training, questionnaire responses were analyzed using a Spearman's rank-order correlation test in RStudio software. Before the correlation test, the scores for the questions under each variable were averaged. The test results of the relevant variables are shown in Table 1. The numbers in the center of the table are their  $\rho$  value (rho), and if there is any asterisk with them, the two variables have a correlation with significance.

Table 1. Test results of relevance variables to CSL teachers' use of corpus-based pedagogy<sup>3</sup>

	1	2	3	4	5	6	7	8	9
1	1								
2	.40**	1							
3	.33*	.21	1						
4	.23	.37**	.31*	1					
5	-.12	.22	.12	.49***	1				
6	-.42*	.08	-.13	.29	.72***	1			
7	.04	.23	.24	.28*	.52***	.59**	1		
8	.00	-.15	.06	.36*	.45**	.16	.23	1	
9	.14	.15	.43**	.22	.29*	.24	.47***	.16	1
Notes	<p>Variables that reflect the traits of CSL teachers are represented by Arabic numerals, which are as follows.</p> <ul style="list-style-type: none"><li>• 1. Teaching experience (less than 1 year: 4%, 1-3 years: 14%, 3-5 years: 16%, 5-10 years: 24%, more than 10 years: 42%).</li><li>• 2. Educational background (bachelor's degree: 24%. master's degree: 70%. PhD: 6%).</li><li>• 3. Motivation for participating in the workshop (mean score: 3.75/4).</li><li>• 4. Prior knowledge of corpora (mean score: 3.03/4).</li><li>• 5. Self-assessment of their skills toward using corpora after the workshop (mean score: 3.09/4).</li><li>• 6. Perceptions of adopting corpora in language teaching (mean score: 2.96/4).</li><li>• 7. Self-assessment of the skills to implement and design DDL activities (mean score: 3.14/4).</li><li>• 8. Willingness to adopt corpus-based methods in future teaching (mean score: 2.75/4).</li><li>• 9. Evaluation of the workshop (mean score: 3.36/4).</li></ul> <p>* means p-value &lt;.05; ** means p-value &lt;.01; *** means p-value &lt;.001.</p>								

3. The number presented in the table is  $\rho$  value (rho), which represents the correlation between the two variables, ranging from 1 to -1. Here, 1 represents the complete positive correlation between the two variables; -1 represents that the two variables are entirely negatively correlated; 0 means that the two variables have no correlation.

The results indicated that the CSL teachers were more confident in their corpus skills after training, more motivated to participate in the workshop, more willing to implement the DDL approach in future classes, and less resistant to using corpora. Furthermore, CSL teachers with prior knowledge of corpus-based pedagogy were more motivated to participate in training, had more confidence in their skills to operate corpora and implement DDL activities after training, were more willing to apply corpus-based pedagogy in the future, were less resistant to adopting corpora, and had a higher training evaluation score. The teachers' evaluation of the workshop and responses to the open-ended questions were positive. Many teachers responded that what the workshop had taught was of practical use to their teaching. This is compatible with research demonstrating that teacher anxiety and confidence in using corpus are major factors inhibiting the application of DDL approach (Lam, 2000; Römer, 2009).

## **4. Conclusions**

Considering the positive feedback from CSL teachers, we believe that training courses benefit in-service teachers, reducing their anxiety about technology, and enhancing their confidence in integrating technological methods into teaching. By teaching corpus knowledge and guiding teachers to use corpora, our study trained in-service CSL teachers in DDL teaching, which is rarely practiced in CSL. Our analysis of the post-questionnaire results indicates that teachers with greater prior knowledge of corpus and more confidence in their abilities are more likely to apply the DDL approach in future classrooms. These findings indicate the utility of training workshops. However, it is too early to assess the actual benefits of DDL for CSL learners because it is not yet used in classrooms, and more research is required. Our study is but a starting point for research on the DDL approach in CSL.

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